

CLAIMS

WE CLAIM:

1. A method for transferring control between a first network interface and at least a second network interface in a multiple network interface device, after the first network interfaces transmits an identifier generated by the first network interface, the identifier associated with a memory location in the multiple network interface device to a second device, the identifier and an associated data field capable of being received by the second network interface, the method comprising:

receiving a message from the second network interface to a program component, the message indicating the reception of the identifier from the second device;

querying the first network interface to supply the program component with the a list of identifiers generated by the first network interface and associated memory locations in multiple network interface device memory; and

transmitting a memory location associated with the identifier to the second network interface, the second network interface capable of transmitting the associated data field to the memory location associated with the identifier.

2. The method of claim 1 wherein the identifier is invalidated under control of a bit field added to the identifier and the associated data field received from the second device.

3. The method of claim 2 wherein if the identifier has been invalidated, the associated data field is discarded.

4. The method of claim 1 wherein the memory location is random access memory.

5. The method of claim 1 wherein the program component is a computer operating system.

6. The method of claim 1 wherein the first network interface and the second network interface operate under a remote direct memory access (RDMA) protocol.

7. The method of claim 1 wherein the first network interface and the second network interface operate under a remote direct memory access (RDMA) protocol over TCP/IP protocol.
8. A method for transferring control between a first network interface and at least a second network interface in a host computer including the first network interface and the second network interface, the method comprising:
 - receiving an identifier from a remote computer, the identifier generated by the first network interface and associated with a memory location in the host computer;
 - sending a message to a program component indicating the reception of the identifier, the program component configured to query the first network interface for a list of identifiers generated by the first network interface and associated memory locations in the host computer;
 - if the list of identifiers includes the identifier from the remote computer, receiving a memory location associated with the identifier; and
 - if the list of identifiers does not include the identifier from the remote computer, invalidating the identifier from the remote computer.
9. The method of claim 8 wherein the identifier is invalidated under control of a bit field added to the identifier and an associated data field received from the remote computer.
10. The method of claim 9 wherein if the identifier has been invalidated, the associated data field is discarded.
11. The method of claim 8 wherein the memory location is random access memory.
12. The method of claim 8 wherein the program component is a computer operating system.
13. The method of claim 8 wherein the first network interface and the second network interface operate under a remote direct memory access (RDMA) protocol.

14. The method of claim 8 wherein the first network interface and the second network interface operate under a remote direct memory access (RDMA) protocol over TCP/IP protocol.
15. A computer readable medium having stored therein instructions for performing acts for transferring control between a first network interface and at least a second network interface in a multiple network interface device, after the first network interface transmits an identifier generated by the first network interface, the identifier associated with a memory location in the multiple network interface device to a second device, the identifier and an associated data field capable of being received by the second network interface; the acts comprising:
 - receiving a message from the second network interface to a program component, the message indicating the reception of the identifier from the second device;
 - querying the first network interface to supply the program component with a list of identifiers generated by the first network interface and associated memory locations in multiple network interface device memory; and
 - transmitting a memory location associated with the identifier to the second network interface, the second network interface capable of transmitting the associated data field to the memory location associated with the identifier.
16. The computer readable medium of claim 15 wherein the identifier is invalidated under control of a bit field added to the identifier and the associated data field received from the second device.
17. The computer readable medium of claim 16 wherein if the identifier has been invalidated, the associated data field is discarded.
18. The computer readable medium of claim 15 wherein the memory location is random access memory.
19. The computer readable medium of claim 15 wherein the program component is a computer operating system.

20. The computer readable medium of claim 15 wherein the first network interface and the second network interface operate under a remote direct memory access (RDMA) protocol.
21. The computer readable medium of claim 15 wherein the first network interface and the second network interface operate under a remote direct memory access (RDMA) protocol over TCP/IP protocol.
22. A computer readable medium having stored therein instructions for performing acts for transferring control between a first network interface and at least a second network interface in a host computer including the first network interface and the second network interface, the method comprising:
 - receiving an identifier from a remote computer, the identifier generated by the first network interface and associated with a memory location in the host computer;
 - sending a message to a program component indicating the reception of the identifier, the program component configured to query the first network interface for a list of identifiers generated by the first network interface and associated memory locations in the host computer;
 - if the list of identifiers includes the identifier from the remote computer, receiving a memory location associated with the identifier; and
 - if the list of identifiers does not include the identifier from the remote computer, invalidating the identifier from the remote computer.
23. The computer readable medium of claim 22 wherein the identifier is invalidated under control of a bit field added to the identifier and the associated data field received from the second device.
24. The computer readable medium of claim 23 wherein if the identifier has been invalidated, the associated data field is discarded.
25. The computer readable medium of claim 22 wherein the memory location is random access memory.

26. The computer readable medium of claim 22 wherein the program component is a computer operating system.
27. The computer readable medium of claim 22 wherein the first network interface and the second network interface operate under a remote direct memory access (RDMA) protocol.
28. The computer readable medium of claim 22 wherein the first network interface and the second network interface operate under a remote direct memory access (RDMA) protocol over TCP/IP protocol.